

spanwise distribution across the wing, the method including the steps of:

predetermining for each of a plurality of different flight conditions the respective position for each of the flight control surfaces, which in combination, optimize the spanwise force distribution across the wing for each of said different flight conditions;

subjecting said aircraft to at least one of said different flight control conditions; and

reconfiguring the control surfaces upwardly or downwardly to the respective [a plurality of] predetermined positions when subjecting said aircraft to each of said at least one flight control conditions [as required] to optimize the spanwise force distribution across the wing [for each of a plurality of different flight conditions, and to simultaneously control trim.]

REMARKS

Upon entry of the above amendments, claims 1-20 will be pending.

Nature of the Amendments:

In claims 1, 11, and 19, the revised language therein recites "independently" deflectable control surfaces, as described at page 3, lines 18-19 and page 11, line 7 of the instant specification. Claims 1, 11 and 19, as amended, also recite that the flight control surfaces of the control surface reconfiguration system are each adjusted to a respective predetermined position, "which in combination", optimize the spanwise force distribution across the aircraft wing for each of a plurality of given flight conditions (e.g., see page 11, line 15 to page 13, line 15, and Figures 5-7; page 13, line 18 to page 14, line 1, and Table 2 on page 14). Amended Claims 1 and 19 recite that the aircraft is a "tailless" aircraft (e.g., see page 1, lines 20-22; page 8, lines 3, 10; and

page 9, line 13). Amended Claim 19 clarifies that the method involves an aircraft that is a "blended wing-body aircraft" (e.g., see page 1, line 14 and page 3, line 17, and original claim 9). Amended method claim 19 also includes the step that the aircraft is actually subjected to at least one of the different flight conditions, and that the step of reconfiguring the control surfaces upwardly or downwardly to the respective predetermined positions occurs *when the aircraft is being subjected to the flight control conditions* (e.g., see page 4, lines 1-3; page 13, line 20 to page 14, line 1, and Table 2 on page 14).). Editorial revisions also have been made to various claims which are non-substantive in nature, but serve to further clarify the claimed subject matter. No new matter has been introduced.

The Premature Final Rejection:

Prior to receiving the final Office Action dated October 23, 2000, Applicant had filed no amendment to claims 1-20 nor filed any Information Disclosure Statement since the previous final Office Action dated February 1, 1999 (Paper No. 6). In the interim, and after the decision of July 27, 2000 by the Board of Appeals to reverse the prior anticipation rejection and remand the case for further proceedings before the examiner, a new art rejection based on newly cited art has been interposed by the examiner. Clearly, the new rejection made in the Office Action dated October 23, 2000 was not necessitated by any action in the record taken by Applicant.

According to M.P.E.P. 706.07(a):

Under present practice, second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure statement filed during the period set forth in 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p).

[Applicant's underlining added for emphasis]

Therefore, Applicant submits that the "final" status given the Office Action of October 23, 2000 was premature, and it should be withdrawn. Applicant separately filed a paper on December 12, 2000 to formalize this request. Accordingly, to rectify this situation, Applicant submits that the above amendments should be entered without needing to meet the criteria pursuant to the provisions of 37 C.F.R. 116. That is, the finality status assigned the Office Action of October 13, 2000 should be withdrawn so that this amendment is treated as filed pursuant to 37 C.F.R. 1.111, and not 37 C.F.R. 1.116.

Response to New Rejection:

Claims 1-20 have been rejected under 35 U.S.C. § 103(a) for the first time in the record as being unpatentable over Ashkenas in view of newly cited U.S. Pat. No. 4,146,200 to Borzachillo.

Applicant respectfully traverses in view of the above amendments and the following reasons.

According to the most recent Office Action:

"Ashkenas discloses a blended delta shape wing with control surface but is silent on the control surface configuration system in which the control surfaces are selectively reconfigurable to a plurality of predetermined positions as required to optimize the spanwise force distribution across the wing for each of a plurality of different flight conditions."

(Office Action, Paper No. 16, page 2).

However, the Office Action is understood to urge that Borzachillo compensate for this acknowledged shortcoming and difference of Ashkenas. Namely, according to the Office Action:

"... Borzachillo clearly shows that control surface configuration system in which the control surfaces are positioned at predetermined positions (column 3) for certain flight configurations are well known in the art."

(Office Action, Paper No. 16, page 2).

The Office is understood to conclude that:

"...[i]t would have been obvious to one skilled in the art at the time the invention was made to has used control surface configuration system in Ashkenas' system as taught by Borzachillo to optimize the maneuverability of the aircraft. ... Please note that the methods as claimed is met by the apparatus of Ashkenas as modified by Borzachillo."

(Office Action, Paper No. 16, pages 2-3).

Applicant's Reply:

In response, Applicant points out that Borzachillo describes auxiliary flaperon controls (12) for aircraft which are NOT tailless aircraft. This fact is immediately apparent from inspecting Fig. 1 of that reference and the related descriptions of the depicted features (col. 3, lines 7). That is, the aircraft described by Borzachillo includes a fuselage (5), swept thin wings (6) and a tail (7). Significantly, the stated, express purpose of the auxiliary flaperons (12) is that they are differentially actuated relative to the main flaperons (11) in order to:

"... induce supplementary aerodynamic forces on the tail to augment the effectiveness of lateral and directional control during combat maneuvers."

(col. 2, lines 53-57) (Applicant's emphasis added by underlining).

Borzachillo is directed to solving a problem that is irrelevant to the flying-wing type, tailless aircraft configuration described by Ashkenas. Namely, Borzachillo states that his auxiliary flaperons (12) serve to effectively augment lateral or roll control of the aircraft (col. 3, lines 30-35) by virtue of their installation and use in:

"... close proximity ... to the tail 7, the induced aerodynamic forces exerted by the air flow trailing over the auxiliary flaperon 12 will impress an additional aerodynamic moment against the tail 7 and thereby augment the aileron to roll the aircraft."

(emphasis added by underlining) (col. 3, lines 55-60, and see col. 4, lines 20-36 and Claim 1).

Since the aircraft of the primary reference to Ashkenas lacks a tail, by design and necessarily, one of ordinary skill would not have been realistically motivated to incorporate the auxiliary flaperons 12 of Borzachillo into Ashkenas. Again, Borzachillo, as explained above, premises the use of the auxiliary flaperons on the presence of a tail section on the aircraft being modified. Contrary to what is suggested in the Office Action, Borzachillo does not teach or suggest that the auxiliary flaperons are universally applicable to any type of aircraft, whether tailed or tailless, "to optimize the maneuverability of the aircraft." In addition to no suggestion of using the auxiliary flaperons in a tailless aircraft, Borzachillo also provides no enablement to one of ordinary skill on how one might go about that enterprise.

Namely, the Office Action has not explained the motivation for a possible further modification of the flying-wing type aircraft of Ashkenas to somehow incorporate a tail section, in order to render the proposed incorporation of the auxiliary flaperons of Borzachillo feasible. Moreover, adding a tail to the flying-wing type aircraft of Ashkenas would effectively destroy the critical aspects of that type of aircraft design.

It is impermissible within the framework of 35 U.S.C. §103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art. Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 230 USPQ 416 (Fed. Cir. 1986).

Consequently, the rejection of instant claims 1-10 and 19-20 based on the proposed combination of Ashkenas and Borzachillo is untenable in view of at least these reasons.

Additionally, independent claims 1, 11 and 19 recite that (in various slightly different but comparable language), for each of a plurality of different flight conditions, the flight control surfaces of the control surface reconfiguration system or means are selectively reconfigurable to respective predetermined positions, which in combination, optimize the spanwise force distribution across the wing for each of the plurality of different flight conditions.

Borzachillo nowhere teach, suggest, or indicate that the aircraft, and in particular a tailed aircraft, including the auxiliary flaperons 12 can provide this function and result. Instead, as explained above, Borzachillo states that his auxiliary flaperons (12) serve to effectively augment lateral or roll control

of the aircraft (col. 3, lines 30-35) by virtue of their installation and use in:

"... close proximity ... to the tail 7, the induced aerodynamic forces exerted by the air flow trailing over the auxiliary flaperon 12 will impress an additional aerodynamic moment against the tail 7 and thereby augment the aileron to roll the aircraft."

(col. 3, lines 55-60).

Therefore, all of instant claims 1-20 differentiate the prior art for this reason. Furthermore, instant claims 2-10, 12-18 and 20 recite various flight conditions that the control surfaces used in the present invention are used to address, and none of these are taught, suggested or indicated by Borzachillo as being controllably effected by his auxiliary flaperons 12.

In view of the above, Applicant submits that the proposed combination of Ashkenas and Borzachillo in the rejection does not defeat the patentability of the present invention, and, accordingly, this rejection should be withdrawn.

If the Examiner believes that a teleconference would be useful in expediting the prosecution of this application, the official is hereby invited to telephone the undersigned counsel to arrange for such a conference.

Respectfully submitted,

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